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09/582,874

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02/02/2005

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EXAMINER

AU, SCOTT D

ART UNIT

PAPER NUMBER

2635

DATE MAILED: 02/02/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/582,874

Applicant(s)

HAMAGUCHI ET AL.

Examiner

Scott Au

Art Unit

2635

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11/5/2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) _____ is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 090904.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____.

DETAILED ACTION

The application of Hamaguchi et al. for an "Alerting device and radio communication device having the alerting device" filed April 06, 2000 has been examined.

Claims 1-17 are pending.

Response to Arguments

Applicant's arguments with respect to claims 1-17 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-3,8 and 10-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mittel et al. (US# 5,828,295) in view of Hegeler (US# 4,727,331).

Referring to claim 1, Mittel et al. disclose a notifying device (100) (i.e. a mode tracking transducer driver) comprising a vibrator (102) (i.e. electromagnetic transducer to generate a tactile alert) to be resonated by a drive signal fed thereto, and a signal

preparing circuit (106) (i.e. a transducer driver) for feeding the drive signal to the vibrator (102) (i.e. electromagnetic transducer to generate a tactile alert) at the time of a notifying operation, wherein the drive signal has a frequency which of the drive signal varies in range including a resonance frequency of the vibrator (col. 3 lines 9-34; see Figure 1).

However, Mittel et al. did not explicitly disclose the frequency of the vibrator in the form of sawtooth waves, the sawtooth waves comprising a portion included with respect to a time based ad portion perpendicular to the time base.

In the same field of endeavor of alerting system, Hegeler discloses the frequency of the vibrator (i.e. mobile receiver) in the form of sawtooth waves (col. 2 line 46 to col. 3 line 11), and it is obvious that the sawtooth waves comprising a portion included with respect to a time based ad portion perpendicular to the time base.

One of ordinary skill in the art understands that the frequency of the mobile receiver in the form of sawtooth waves of Hegeler is desirable in the communication system of Mittel et al. because Mittel et al. suggest square signals in the operation of the transducer 100 (col. 5 lines 29-51) and Hegeler suggests filter 13 converts the square wave pulses to sawtooth-shaped waves in order to enhance the dynamic range of variation obtainable (col. 4 lines 1-15).

Referring to claim 2, Mittel et al. in view of Hegeler disclose the device of claim 1, Mittel et al. disclose wherein the variation of the frequency of the drive signal

corresponds to a variation in the resonance frequency of the vibrator due to tolerances of specifications on which the resonance frequency is dependent (col. 3 lines 9-34).

Referring to claim 3, Mittel et al. in view of Hegeler disclose the device of claim 1, Mittel et al. disclose wherein the resonance frequency of the vibrator is a low frequency of p to hundreds of hertz, and the vibration of the vibrator has at the resonance frequency an amplitude generally perceivable by t he human body (col. 3 lines 9-34).

Referring to claim 8, Mittel et al. in view of Hegeler disclose the device of claim 1, Mittel et al. disclose wherein the frequency of the drive signal gradually increases or gradually decreases stepwise within the definite range (col. 3 lines 9-34).

Referring to claim 10, Mittel et al. disclose a wireless communications system comprising a notifying device (100) (i.e. a mode tracking transducer driver) for notifying the user of incoming calls, the notifying device (100) (i.e. a mode tracking transducer driver) comprising a vibrator (102) (i.e. electromagnetic transducer to generate a tactile alert) to be resonated by a drive signal fed thereto, and a signal preparing circuit (106) (i.e. a transducer driver) for feeding the drive signal to the vibrator (102) (i.e. electromagnetic transducer to generate a tactile alert) at the time of a notifying operation, wherein frequency which of the drive signal varies in range including a resonance frequency of the vibrator (102) (i.e. electromagnetic transducer to generate a tactile alert) (col. 3 lines 9-34; see Figure 1).

However, Mittel et al. did not explicitly disclose the frequency of the vibrator in the form of a sawtooth waves, the sawtooth waves comprising a portion inclined with respect to a time base and portion perpendicular to the time base.

In the same field of endeavor of alerting system, Hegeler discloses the frequency of the vibrator (i.e. mobile receiver) in the form of sawtooth waves (col. 2 line 46 to col. 3 line 11), and it is obvious that the sawtooth waves comprising a portion included with respect to a time based ad portion perpendicular to the time base (i.e. also see prior art Mizuno (US# 4,674,069).

It would have been obvious to provide sawtooth waves for the same reason with respect to claim 1 above.

Referring to claim 11, Mittel et al. disclose a wireless communication system having incorporated therein a notifying device (100) (i.e. a mode tracking transducer driver) for performing different kinds of notifying operations including notification of incoming calls, the notifying device comprising a vibrator (102) (i.e. electromagnetic transducer to generate a tactile alert) to be resonated by a drive signal fed thereto, and a drive signal feed circuit (i.e. a circuit of notifying device 100 generates signal to the electromagnetic transducer 102) for feeding the drive signal to the vibrator (102) (i.e. electromagnetic transducer to generate a tactile alert), which the drive signal feed circuit comprises:

command signal preparing means (104) (i.e. voltage control oscillator) for preparing notification command signals (502) (i.e. a transducer drive signal) which are

different for different contents of notification in conformity with the content, and drive signal preparing means (106) (i.e. a transducer driver) operative in response to the notification command signal to prepare a drive signal which has a frequency of the vibrator.

However, Mittel et al. did not explicitly disclose the frequency of the vibrator in the form of sawtooth waves, the sawtooth waves comprising a portion inclined with respect to a time base and a portion perpendicular to the time base.

In the same field of endeavor of alerting system, Hegeler discloses the frequency of the vibrator (i.e. mobile receiver) in the form of sawtooth waves (col. 2 line 46 to col. 3 line 11), and it is obvious that the sawtooth waves comprising a portion included with respect to a time based ad portion perpendicular to the time base (i.e. also see prior art Mizuno (US# 4,674,069)).

It would have been obvious to provide sawtooth waves for the same reason with respect to claim 1 above.

Referring to claim 12, Mittel et al. in view of Hegeler disclose the wireless communication system of claim 11, Mittel et al. disclose wherein the drive signal prepared by the drive signal preparing means (106) (i.e. a transducer driver) varies in frequency continuously in conformity with the notification command signal or intermittently at a specified period in conformity with the notification command signal (col. 2 lines 38-47 and col. 3 line 9 to col. 4 line 11).

Referring to claim 13, Mittel et al. in view of Hegeler disclose the wireless communication system of claim 11, Mittel et al. disclose wherein the drive signal prepared by the drive signal preparing means (106) (i.e. a transducer driver) varies in frequency at a specified period in conformity with the notification command signal (col. 2 lines 38-47 and col. 3 line 9 to col. 4 line 11).

Referring to claim 14, Mittel et al. in view of Hegeler disclose the wireless communication system of claim 11, Mittel et al. disclose wherein the variation of frequency of the drive signal prepared by the drive signal preparing means (106) (i.e. a transducer driver) corresponds to a variation in the resonance frequency of the vibrator (102) (i.e. electromagnetic transducer to generate a tactile alert) due to tolerances for specifications which govern the resonance frequency (col. 2 lines 38-47 and col. 3 line 9 to col. 4 line 11).

Referring to claim 15, Mittel et al. in view of Hegeler disclose a notifying device in claim 1, claim 15 equivalent to that of claim 3 addressed above, incorporated herein. Therefore, claim 15 is rejected for same reasons given with respected to claim 3.

Referring to claim 16, Mittel et al. in view of Hegeler disclose the wireless communication system of claim 11, Mittel et al. disclose wherein the command signal preparing means prepares an incoming call notifying command signal for notifying the user of an incoming call, a caller notifying command signal for distinguishing callers,

and /or a mode notifying command signal for notifying the user of an operation mode of the system (col. 2 lines 26-47 and col. 3 lines 9-34).

Claims 4-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mittel et al. (US# 5,828,295) in view of Hegeler (US# 4,727,331) as applied to claim 1 above, and further in view of Kagan (US# 3,623,064).

Referring to claims 4-6, Mittel et al. disclose a notifying device of claim 1. However, Mittel et al. in view of Hegeler did not explicitly disclose wherein the drive signal has an alternating waveform of rectangular waves or sine waves having a frequency periodically varying at 0.5 to 10 Hz, 1.37 to 2.98 Hz or at 2.18 Hz.

In the same field of endeavor of electric vibrator, Kagan teaches wherein the drive signal has an alternating waveform of rectangular waves or sine waves having a frequency periodically varying at a frequency in a subaudible range of 5 Hz (col. 1 lines 21-30; see Figure 3) in order to activate the vibrator means.

One ordinary skill in the art understands that waveform of Kagan is desirable in the communication system of Mittel et al. in view of Hegeler, both Mittel et al. and Kagan's alerting devices, particularly to paging receivers. Therefore, it would have been obvious person as a matter of design expedient through routine experimentation to a person of ordinary skill in the art at the time of the invention was made to include wherein the drive signal has an alternating waveform of rectangular waves or sine waves having a frequency periodically varying at 0.5 to 10 Hz, 1.37 to 2.98 Hz or at 2.18

Hz of system disclosed by Kagan into system of Mittel et al. with the motivation for doing so would allow the range of frequency of the drive signal varied within range that is suitable and work best for their system in achieving optimal results.

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mittel et al. (US# 5,828,295) as applied to claim 1 above, and further in view of Ditthardt (US# 3,628,150).

Referring to claim 7, Mittel et al. disclose a notifying device of claim 1. However, Mittel et al. did not explicitly disclose wherein the frequency of the drive signal varies in the form of triangular waves, sine waves having the definite range as the amplitude thereof.

In the same field of endeavor of alerting signal in a paging communication system, Ditthardt teaches wherein the frequency of the drive signal varies in the form of triangular waves, sine waves having the definite range as the amplitude thereof (col. 4 lines 6-25; see Figure 2) in order to have a calling-code signal to a substantially noise-free continuous-wave signal having different amplitude levels reflecting the code represented by the detected signal.

One ordinary skill in the art understands that sine waves of Ditthardt et al. is desirable in the communication system of Mittel et al. in view of Hegeler, both Mittel et al. and Ditthardt's alerting devices, particularly to paging receivers. Therefore, it would have been obvious to a of ordinary skill in the art at the time of the invention was made

to include wherein the frequency of the drive signal varies in the form of triangular waves, sine waves having the definite range as the amplitude thereof of system disclosed by Ditthardt into system of Mittel et al. with the motivation for doing so would allow the frequency varied in wave form with definite range.

Claims 9 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mittel et al. (US# 5,828,295) in view of Hegeler (US# 4,727,331) as applied to claims 1 and 11 above, and further in view of Saiki et al. (US# 6,208,237).

Referring to claim 9, Mittel et al. in view of Hegeler disclose a notifying device of claim 1. However, Mittel et al. in view of Hegeler did not explicitly disclose wherein the vibrator comprises a casing, a diaphragm having a fixed end on an inner peripheral wall of the casing, a magnet attached to a free end of the diaphragm, and a coil disposed as opposed to the magnet, and the drive signal is fed to the coil.

In the same field of endeavor of electro-mechanical and acoustic transducer, Saiki et al. teach wherein the vibrator comprises a casing, a diaphragm having a fixed end on an inner peripheral wall of the casing, a magnet attached to a free end of the diaphragm, and a coil disposed as opposed to the magnet, and the drive signal is fed to the coil (col. 1 line 60 to col. 2 line 15 and col. 6 lines 41-64) in order to have a strong vibration and sound.

One ordinary skill in the art understands that vibrator enclosure of Saiki et al. is desirable in the communication system of Mittel et al. in view of Hegeler, both Mittel et

al. and Saiki et al. alerting devices, particularly to paging receivers. Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention was made to include wherein the vibrator comprises a casing, a diaphragm having a fixed end on an inner peripheral wall of the casing, a magnet attached to a free end of the diaphragm, and a coil disposed as opposed to the magnet, and the drive signal is fed to the coil of system disclosed by Saiki et al. into system of Mittel et al. with the motivation for doing so would allow a notifying device consisted of a vibrator.

Referring to claim 17, Mittel et al. in view of Hegeler disclose a notifying device in claim 1, claim 17 equivalent to that of claim 9 addressed above, incorporated herein. Therefore, claim 17 is rejected for same reasons given with respected to claim 9.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Mizuno (US# 4,674,069) disclose frequency variations are in the form of sawtooth (triangular) waves with respect to time of a communication system.

Any inquiry concerning this communication or earlier communications form the examiner should be directed to Scott Au whose telephone number is (571) 272-3063. The examiner can normally be reached on Mon-Fri, 8:30AM – 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Horabik can be reached at (571) 272-3068. The fax phone

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numbers for the organization where this application or proceeding is assigned are (703)-872-3906.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)-305-3900.

Scott Au

MICHAEL HORABIK
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600

A handwritten signature in black ink, appearing to read "Michael Horabik", written in a cursive style.